Claims

What is claimed:

1. A method of transmitting sub-protocol data units from a plurality of base transceiver stations to a subscriber unit, the method comprising:

estimating time delays required for transferring the sub-protocol data units between a scheduler unit and each of the base transceiver stations; and

the scheduler unit generating a schedule of time slots and frequency blocks in which the sub-protocol data units are to be transmitted from the base transceiver stations to the subscriber unit.

2. The method of transmitting sub-protocol data units from a plurality of base transceiver stations to a subscriber unit of claim 1, wherein the time delays are used to generate the schedule.

3. The method of transmitting sub-protocol data units from a plurality of base transceiver stations to a subscriber unit of claim 2, wherein the time delays are used to generate the schedule by using the time delays to project a timing of when the sub-protocol data units are to be wirelessly transmitted from the base transceiver stations.

4. The method of transmitting sub-protocol data units from a plurality of base transceiver stations to a subscriber unit of claim 2, wherein the time delay are used to

generate a look ahead schedule that compensates for the timing delays of the sub-protocol data units from the scheduler unit to the base transceiver stations.

5. The method of transmitting sub-protocol data units from a plurality of base transceiver stations to a subscriber unit of claim 1, further comprising:

wirelessly transmitting the sub-protocol data units from the base transceiver stations to the subscriber unit according to the schedule.

6. The method of transmitting sub-protocol data units from a plurality of base transceiver stations to a subscriber unit of claim 1, wherein estimating time delays required for transferring the sub-protocol data units between the scheduler unit and the base transceiver stations comprises time-stamping sub-protocol data units before sub-protocol data units are transferred from the scheduler unit to the base transceiver stations, and estimating the time delays by comparing the times the sub-protocol data units are actually received by the base transceiver stations with the times of the time-stamping.

7. The method of transmitting sub-protocol data units from a plurality of base transceiver stations to a subscriber unit of claim 2, wherein the time delays are determined at each base transceiver station and transferred back to the scheduler unit.

8. The method of transmitting sub-protocol data units from a plurality of base transceiver stations to a subscriber unit of claim 1, further comprising:

the scheduler receiving standard protocol data units from a network;

the scheduler sub-dividing the standard protocol data units forming the sub-protocol data units.

9. The method of transmitting sub-protocol data units from a plurality of base transceiver stations to a subscriber unit of claim 1, further comprising:

storing the sub-protocol data units in scheduling buffers.

10. The method of transmitting sub-protocol data units from a plurality of base transceiver stations to a subscriber unit of claim 1, further comprising:

synchronizing the base transceiver stations to a common reference clock.

11. The method of transmitting sub-protocol data units from a plurality of base transceiver stations to a subscriber unit of claim 10, wherein synchronizing the base transceiver stations to a common reference clock comprises:

receiving a global positioning satellite (GPS) signal; and

generating the common reference clock from the GPS signal.

12. The method of transmitting sub-protocol data units from a plurality of base transceiver stations to a subscriber unit of claim 1, further comprising:

transferring the sub-protocol data units from the scheduler to the base transceiver stations in sufficient time to allow the base transceiver stations to transmit according to the schedule.

13. The method of transmitting sub-protocol data units from a plurality of base transceiver stations to a subscriber unit of claim 1, wherein the scheduler is located in a base station controller.

14. The method of transmitting sub-protocol data units from a plurality of base transceiver stations to a subscriber unit of claim 1, wherein the scheduler is located within a home base transceiver station.

15. The method of transmitting sub-protocol data units from a plurality of base transceiver stations to a subscriber unit of claim 1, wherein the home base transceiver station is the base transceiver station having a highest quality transmission link with the subscriber unit.

16. The method of transmitting within a cellular wireless system of claim 5, wherein the sub-protocol data units are transmitted between the base transceiver stations and the

subscriber unit in data blocks, the data blocks being defined by a frequency block and time slot.

17. The method of transmitting within a cellular wireless system of claim 5, further comprising:

transmitting sub-protocol data units from the subscriber unit to at least one of base transceiver stations.

18. The method of transmitting within a cellular wireless system of claim 17, wherein the sub-protocol data units are transmitted from the subscriber unit in data blocks, the data blocks being defined by a frequency block and time slot.

19. The method of transmitting within a cellular wireless system of claim 17, wherein the scheduler unit generates a map that determines when the data blocks are transmitted from the subscriber unit to the base transceiver stations.

20. The method of transmitting within a cellular wireless system of claim 19, wherein there are a predetermined number of data blocks transmitted per frame unit of time.

21. The method of transmitting within a cellular wireless system of claim 20, wherein the map is transmitted to the subscriber unit once per frame unit of time.

22. The method of transmitting within a cellular wireless system of claim 1, further comprising:

wirelessly transmitting from a single one of the base transceiver stations to the subscriber unit.

23. A cellular wireless communication system comprising:

a scheduler unit, the scheduler unit receiving the protocol data units from a network and sub-dividing the protocol data units into sub-protocol data units;

a plurality of base transceiver stations receiving the sub-protocol data units, and wirelessly transmitting the sub-protocol data units to a subscriber unit;

means for estimating time delays for required for transferring the sub-protocol data units from the scheduler unit to the base transceiver stations; wherein

the scheduler unit determines a schedule protocol for transmission of the sub-protocol data units by the plurality of base transceiver stations, the schedule accounting for the time delays.

24. The cellular wireless communication system of claim 23, further comprising a base controller station, the base controller station comprising the scheduler unit.

25. The cellular wireless communication system of claim 23, wherein the plurality of base transceiver stations comprise a home base transceiver station, the home base transceiver station comprising the scheduler unit.

26. The cellular wireless communication system of claim 25, wherein the home base transceiver station is the base transceiver station that has a highest quality transmission link with the subscriber unit.

27. The cellular wireless communication system of claim 23, wherein the sub-protocol data units are transmitted between the base transceiver stations and the subscriber unit in data blocks, in which the data blocks are defined by a frequency block and time slot.

28. The cellular wireless communication system of claim 27, wherein the scheduler generates a map that depicts when the data blocks are transmitted from the base transceiver stations to the subscriber unit.

29. The cellular wireless communication system of claim 28, wherein the map is generated once per a frame unit of time.

30. The cellular wireless communication system of claim 29, wherein there are a predetermined number of data blocks transmitted per frame unit of time.

31. The cellular wireless communication system of claim 30, wherein the map is transmitted to the subscriber unit once per frame unit of time.

32. The cellular wireless communication system of claim 27, wherein a number of sub-protocol data units that are within a data block is dependent upon a quality of transmission links between the base transceiver stations and the subscriber unit.

33. The cellular wireless communication system of claim 32, wherein the scheduler unit maintains transmission link quality information between each the plurality of base transceiver stations and the subscriber unit.

34. The cellular wireless communication system of claim 27, wherein the scheduler unit determines how many data blocks are transmitted from each base transceiver station to the subscriber unit during a frame unit of time, based upon the transmission link quality information.

35. The cellular wireless communication system of claim 33, wherein the transmission link quality information is periodically updated.

36. The cellular wireless communication system of claim 33, wherein the transmission link quality information is included within a transmission link quality look-up-table.

37. The cellular wireless communication system of claim 33, wherein the transmission link quality information is determined at each base transceiver station by sending predetermined patterns of information within the sub-protocol data units.

38. The cellular wireless communication system of claim 33, wherein the transmission link quality information is transmitted from the subscriber unit back to the scheduler unit.

39. The cellular wireless communication system of claim 23, wherein sub-protocol data units are also transmitted from the subscriber unit to at least one of base transceiver stations.